This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.   (Currently amended) A method for providing a plurality of service classes in a network for transporting a data packet, the data packet to be afforded one of the plurality of service ~~clasess~~ classes, the network comprising a plurality of managed elements connected to each other via a plurality of communication links, comprising:

partitioning each managed element into a plurality of element instances;

engineering each element instance of a given managed element to provide one of the service classes, wherein the element instances are connected to element instances that provide the same service class via permanent virtual circuits; and

handling the data packet at each managed element with the element instance corresponding to the service class of the data packet.

2.   (Original) The method of claim 1, wherein the service classes comprise high priority and low priority.

3.   (Original) The method of claim 2, wherein the service classes further comprise medium priority.

4.   (Original) The method of claim 1, further comprising:

determining the service class of the data packet at only one managed element in the network.

5.   (Original) The method of claim 4, wherein the one managed element comprises the first managed element to handle the data packet.

6.   (Original) The method of claim 5, wherein the one managed element resides at the edge of the network.

7.   (Original) The method of claim 4, wherein the determining comprises examining a plurality of data packet fields.

8.   (Original) The method of claim 7, wherein the fields comprise an indicator of the source or destination address.

9.   (Original) The method of claim 7, wherein the fields comprise a port indicator.

10.   (Original) The method of claim 7, wherein the fields comprise a protocol identifier.

11.   (Original) The method of claim 7, wherein the fields comprise a precedence indicator.

12.   (Currently Amended) A network for transporting a data packet to be afforded one of a plurality of service classes, comprising:

a plurality of managed network elements, each managed element partitioned into a plurality of element instances, each element instance in a given managed element engineered to provide one of the service classes; and

a plurality of communication links connecting the managed elements to each other, the communication links carrying the data packet between the managed elements, wherein the element instances are connected to element instances that provide the same service class through the plurality of communication links via permanent virtual circuits.

13.   (Original) The network of claim 12, wherein the service classes comprise high and low priority.

14.   (Original) The network of claim 12, wherein the service classes comprise high, medium, and low priority.

15.   (Original) The network of claim 12, wherein the service classes comprise VoIP priority.

16.   (Original) The network of claim 12, wherein the service classes comprise best efforts priority.

17.   (Original) The network of claim 12, wherein the managed elements comprise routers.

18.   (Original) The network of claim 12, wherein the network comprises a service provider network.

19.   (Original) The network of claim 12, wherein one of the managed elements determines the service class to be afforded the data packet.

20.   (Original) The network of claim 19, wherein the one managed element comprises the first managed element to handle the data packet.

21.   (Original) The network of claim 20, wherein the one managed element resides at the edge of the network.

22.   (Original) The network of claim 19, wherein the service class to be afforded is determined by examining a plurality of data packet fields.

23.   (Original) The network of claim 22, wherein the fields comprise an indicator of what type of application originally generated the data packet.

24.   (Original) The network of claim 12, wherein each managed element to handle the data packet subsequent to the determination of service class utilizes an element instance corresponding to the element instance utilized by the managed element that forwarded the data packet.

25.   (Currently Amended) A managed network element for handling a data packet, the data packet to be afforded one of a plurality of service classes, comprising, a memory, a processor in communication with the memory, executable code running on the processor, and a forwarding table stored in the memory, the memory, processor, executable code, and the forwarding table collectively comprising the element resources, the element resources being partitioned into a plurality of element instances, each element instance being engineered to

provide one of the service classes, <u>wherein the element instances providing identical service classes are connected to one another via permanent virtual circuits</u>.

26.   (Original) The network element of claim 25, wherein the element resources further comprise an application specific integrated circuit.

27.   (Original) The network element of claim 25, wherein the element resources further comprise a programmable gate array.

28.   (Original) The network element of claim 25, wherein the element resources further comprise a reprogrammable gate array.

29.   (Currently Amended) A managed network element for handling a data packet, the data packet to be afforded one of a plurality of service classes, comprising, a memory, a processor in communication with the memory, a forwarding table stored in the memory, and an application specific integrated circuit (ASIC), the memory, processor, ASIC, and forwarding table comprising the element resources, the element resources being partitioned into a plurality of element instances, each element instance being engineered to provide one of the service classes, <u>wherein the element instances are connected to each other via permanent virtual circuits</u>.